# *SCIENCE*
# *Seventh Grade*

**LIFE SCIENCE STANDARDS**

**Cell Structure and Function**

*The student will investigate the structure and function of plant and animal cells.*

| Key | Reporting Category | | WILD Activity |
|---|---|---|---|
| **D** | | Design and construct a hierarchy among cells, tissues, organs, and systems. | |
| **A** | **CS** | Determine the relationships among cells, tissues, organs, and systems given a diagram and identify the function of organ systems. | |
| **A** | **CS** | Recognize basic structures that most cells share (i.e., nucleus, cytoplasm, and cell membrane). | |
| **A** | **CS** | Distinguish between plant and animal cells. | |
| **A** | **CS** | Identify major cell organelles and their functions. | |
| **D** | | Sequence a series of diagrams depicting the stages of cell division in plant and animal cells. | |
| **A** | **CS** | Sequence a series of diagrams depicting the movement of chromosomes during mitosis. | |
| **I** | | Design models to illustrate how materials move between cells and their environment. | |
| **A** | **CS** | Predict the movement of substances through osmosis or diffusion across the cell membrane, given solutions of different concentrations. | |

**Food Production and Energy for Life**

*The student will study the basic parts of plants, investigate how plants produce food, and discover that plants and animals use food to sustain life.*

| | | | |
|---|---|---|---|
| **D** | | Compare and contrast photosynthesis and respiration. | |
| **A** | **FP** | Determine what plants need to make food. | |
| **A** | **FP** | Identify photosynthesis as the food making process in plants. | |
| **A** | **FP** | Identify the reactants and products of photosynthesis and respiration. | |
| **D** | | Relate the processes of photosynthesis and respiration to appropriate cellular organelles. | |
| **A** | **FP** | Associate the processes of photosynthesis and respiration with appropriate cellular organelles. | |
| **D** | | Diagram and explain how oxygen and carbon dioxide are exchanged between living things and their environment. | |
| **A** | **FP** | Select the structures that animals use to obtain oxygen. | |
| **A** | **FP** | Classify animals according to their means of obtaining oxygen. | Fishy Who's Who, p.AW8 |
| **A** | **FP** | Select the illustration that depicts the movement of oxygen and carbon dioxide between living things and their environment. | |
| **A** | **FP** | Interpret a diagram depicting the oxygen-carbon dioxide cycle. | |

**KEY**
**I = Introduced D = Developing A = State Assessed M = Mastered**

**REPORTING CATEGORY**
**CS = Cell Structure & Function FP = Food Production & Energy HR = Heredity & Reproduction**
**AC = Atmospheric Cycles SP = Structure & Properties**

**Note: "A" indicates the state curriculum (CRT) assessment only.**
**All the skills ("I"…"D"…"A"…"M") are addressed in the classroom assessment.**

**Heredity and Reproduction**

*The student will understand the basic principles of inheritance.*

| | | | |
|---|---|---|---|
| **A** | **HR** | Match a flower part with its reproductive function. | |
| **A** | **HR** | Distinguish between sexual and asexual methods of reproduction. | |
| **D** | | Recognize that genetic information is passed from parent to offspring during reproduction. | |
| **A** | **HR** | Recognize advantages and disadvantages of sexual and asexual reproduction. | |
| **A** | **HR** | Recognize a variety of pollination methods and associated floral adaptations. | |

**Earth Science Standard**

**Atmospheric Cycles**

*The student will investigate the relationships among atmospheric conditions, weather, and climate.*

| | | | |
|---|---|---|---|
| **D** | | Explain how conditions, such as the amount of precipitation, temperature, and wind speed affect the water cycle. | Puddle Wonders! , p.AW114 |
| **A** | **AC** | Determine how temperature affects evaporation and condensation in the atmosphere. | |
| **A** | **AC** | Identify the detailed features of the water cycle given a diagram (i.e., evaporation, condensation, precipitation, run-off, and transpiration). | Where Does Water Run? , p.AW21<br>Water Wings, p.AW110<br>Puddle Wonders! , p.AW114<br>Alice in Waterland, p.AW151 |
| **D** | | Record and analyze meteorological data to predict weather patterns. | |
| **D** | | Use diagrams to demonstrate how atmospheric winds and ocean currents affect weather and climate. | |
| **A** | **AC** | Analyze data and make predictions about weather given a scenario. | |
| **A** | **AC** | Interpret weather data using a weather map. | |
| **I** | | Explain the impact of catastrophic events on climate (e.g., volcanic eruption). | |
| **I** | | Research careers related to meteorology. | |

**Physical Science Standard**

**Structure and Properties of Matter**

*The student will investigate the characteristic properties of matter.*

| | | | |
|---|---|---|---|
| **D** | | Differentiate among elements, compounds, and mixtures. | |
| **A** | **SP** | Distinguish between elements, compounds, and mixtures (i.e., Na, Cl, NaCl, C, O2, CO2, H2, and H20). | |
| **D** | | Describe the particle arrangement associated with different states of matter. | |
| **A** | **SP** | Compare the motion and arrangement of molecules in solids, liquids, and gases. | |
| **D** | | Identify the mass, volume, density, boiling point, melting point, and solubility of a given substance. | |
| **D** | | Measure and/or calculate the mass, volume, density, and temperature of a given substance. | |

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| | | | |
|---|---|---|---|
| **A** | **SP** | Determine the measurable properties of matter and appropriate metric units (i.e., weight, mass, volume, density, size (length, width, height, and temperature). | |
| **I** | | Obtain information about an element with the aid of a periodic table. | |
| **A** | **SP** | Classify substances as elements or compounds from their symbols or formulas. | |

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